

## UCLA researchers say plan to eliminate AIDS in South Africa flawed

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In 2008, Reuben Granich and his colleagues at the World Health Organization published a paper in the medical journal *The Lancet* that proposed a new strategy for combating HIV in South Africa, a country staggered by the virus, with as much as 18 percent of the population estimated to be infected.

Based on a [mathematical model](#), the study suggested a "test-and-treat" strategy. This would involve, among other steps, testing the entire population of South Africa for [HIV](#) and immediately beginning anti-retroviral therapy for all who tested positive. The current standard of care calls for waiting until symptoms appear after diagnosis.

Such a test-and treat strategy, the authors suggested, could eventually lead to the elimination of HIV in South Africa within a decade. Since then, the utility and feasibility of this approach have been widely debated, and it remains the leading potential prevention strategy for South Africa.

One aspect of the proposal that has not been examined, however, is the strategy's full estimated cost. Now, UCLA researchers have done their own modeling study and found that the costs have been substantially underestimated.

Reporting in the current online edition of *The [Lancet](#)*, Sally Blower, director of UCLA's Center for Biomedical Modeling and a member of the UCLA AIDS Institute, and Bradley Wagner, a postdoctoral scholar

in Blower's lab, used their own sophisticated modeling techniques to duplicate the estimated cost curve used in the WHO report. They found that key potential costs — including the expense of annual testing for a population of 32 million, the implementation of prevention programs and the "ramping up" of a health infrastructure that is currently overwhelmed — were not included in the proposed approach.

Because the WHO did not disclose what costs they included in their estimates, Blower said, the UCLA researchers reconstructed it on their own. Using their own mathematical modeling, the researchers devised a cost curve based only on treatment costs.

The WHO report assumed that the maximum cost of treating a patient with first-line drugs would be \$1,163 a year, and treatment with second-line drugs — initiated when first-line therapy is no longer effective — would be \$4,083 a year. The WHO authors also assumed that 97 percent of patients would need first-line drugs and 3 percent would need second-line drugs each year.

Using this information, and the estimated 4.5 million individuals who would, once identified, need treatment annually, the UCLA researchers constructed a maximum cost curve that, for the first five years after implementation, exactly matched the cost estimated by the WHO.

And that is the problem, Blower said.

"Their cost curves are only based on treatment costs," she said. "They do not include the costs of an annual testing program for the 27 million adults in South Africa who are currently uninfected, nor do they include the costs of the extensive prevention interventions that are necessary to reduce transmission."

Most importantly, they also do not include any costs for the tenfold

scaling up in the health care infrastructure that would be necessary to reach the entire population, Blower said.

"The health infrastructure in South Africa is at capacity now," Wagner said. "As a result, just reaching the entire population, many of whom live in remote rural areas in a country almost twice the size of Texas, would be hugely expensive and should be taken into account."

"Certainly, we should treat people who need it," Blower said. "But the costs of a universal test-and-treat strategy in South Africa have been substantially underestimated."

Provided by University of California Los Angeles

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